

HERPETOLOGY.—*The herpetofauna of Harford County, Maryland.* CLYDE F. REED, Baltimore, Md. (Communicated by Doris M. Cochran.)

One of the most varied geographical areas in Maryland is Harford County. It is bounded on the east by Susquehanna River, on the southeast by Chesapeake Bay, and on the west and south by Little Gunpowder River. To the north there is no definite geographic boundary with Pennsylvania. The largest inland streams are Deer Creek, Broad Creek, Rock Run, and Bynum Run.

The lower southeast eighth of the county is below the Fall Line, thus providing coastal situations along lower Susquehanna River, Chesapeake Bay, and Bush River. The Little Gunpowder runs along the western and southern boundary of Harford County, separating it from Baltimore County. Many deep rocky ravines are exposed along its course, down to the Fall Line, where the river flattens out into a tidal river, like Bush River and the lower Susquehanna River. Deer Creek also exposes extensive rock formations in the northern and central portions of the county, especially near The Rocks, near Kalmia, and below Darlington, where Deer Creek enters the Susquehanna River just below Conowingo Dam. Most of the rock formations in Harford County are acidic in nature, there being a few calcareous regions in the southwest portion of the county. These areas afford a variety of habitats for amphibians and reptiles, thus accounting for the large number of species found in the county.

Some of the areas in Harford County have been quite extensively studied. The most frequented area is the Broad Creek area where there is a Boy Scout Camp. Other areas well studied are the regions of The Rocks, Conowingo, Lapidum along the Susquehanna from Conowingo to Havre de Grace along the rocky slopes, the region about Aberdeen, and the regions about Bel Air, Churchville, Kalmia, Webster, Hickory, Fallston, Whiteford, Jarrettsville, Shawsville, Norrisville, Edgewood, and Magnolia.

The distribution of the species of plants and animals to be found in Harford County follows the geographical boundaries very closely. Species that are typically of Piedmont distribution are: *Diadophis punctatus edwardsii*, *Lampropeltis triangulum triangulum*, *Natrix septemvittata*, *Clemmys insculpta*,

and *Clemmys muhlenbergii*; species that are typically coastal reaching up into Harford County are: *Eumeces fasciatus*, *Eumeces laticeps* (?), *Carphophis amoena amoena*, *Opheodrys aestivus*, *Lampropeltis getulus getulus*, *Storeria dekayi*, and *Sternotherus odoratus*; the other species are found in both regions.

Many of the following records are additions or new records to the herpetofauna of Harford County. Since several of these records are additions to McCauley's *The reptiles of Maryland*, 1945, the following annotated list of species is presented. All records and annotated specimens have been collected by the author unless otherwise noted. The collection numbers refer to specimens in the herpetological collections of the author. A total of 43 species are listed from Harford County, 18 of these species are either new records or extend the known range of the species in this county.

1. *Diemictylus viridescens viridescens* (Rafinesque): NEWT OR RED EFT. The Rocks (in meadow pools, May 1954); Broad Creek (in swamp 2 miles north of Broad Creek Camp); Rock Run (in swamp and edge of stream, spring 1953); Churchville (eft stage).

2. *Desmognathus fuscus fuscus* (Green): DUSKY SALAMANDER. The Rocks, Rock Ridge Road (April 10, 1954, #789-791); Broad Creek (common under rocks along streams, May 12, 1953, #127); Lapidum (April 25, 1953, #129-130; April 9, 1953, #146-154); Shures Landing below Conowingo Dam (September 20, 1953, #18-24; March 20, 1954, #569-572); Susquehanna River at Schweers Landing (April 9, 1953, #186-192); Deer Creek near Darlington (April 9, 1953, #273); Kalmia (in a spring, May 1955).

3. *Plethodon cinereus cinereus* (Green): WOOD SALAMANDER; RED-BACK SALAMANDER (red and black phases). Broad Creek (common under rocks and logs); Deer Creek at Route 1, north of Bel Air (Oct. 15, 1954, #995-1007); Deer Creek near Darlington (September 20, 1953, #28-35, 85; April 19, 1954, #144; April 9, 1953, #267-272); along Rock Run near Susquehanna River at Schweers Landing (April 9, 1953, #166-185, 193-202); Lapidum (April 9, 1953, #647-650; April 25, 1953, #99-102); Deer Creek at Susquehanna River (April 25, 1953, #155-165; summer 1953,

§131-139); Shures Landing below Conowingo Dam (March 20, 1954, #524-527).

4. *Plethodon glutinosus glutinosus* (Green): SLIMY SALAMANDER. Deer Creek near Darlington under rocks on hillsides (April 9, 1953, #103-108; #274-275; September 20, 1953, #26; April 25, 1953, #114-125, including Deer Creek at Susquehanna River); Deer Creek at Route 1, north of Bel Air (October 15, 1954, #977-978); Broad Creek. Many of the specimens from the Deer Creek and Susquehanna River areas have no spots; they are solid black.

5. *Pseudotriton ruber ruber* (Sonnini): RED SALAMANDER. Rock Run near Schweers Landing (April 25, 1953, #112-113); Broad Creek (in old spring house near swamp; under logs); Dublin; Deer Creek near Darlington (April 19, 1953, #145); Shures Landing below Conowingo Dam; The Rocks (in spring house, April 1954); Edgewood; Churchville (in old well).

6. *Eurycea bislineata bislineata* (Green): TWO-LINED SALAMANDER. Broad Creek (May 12, 1953, #128, edge of streams); Shures Landing below Conowingo Dam (April 9, 1953, #126; September 20, 1953, #17); Susquehanna River near Schweers Landing (common); Rock Run.

7. *Eurycea longicauda longicauda* (Green): LONG-TAILED SALAMANDER. Shures Landing below Conowingo in seepage (September 20, 1953, #14-16); Broad Creek (in spring house).

8. *Bufo terrestris americanus* Holbrook: AMERICAN TOAD. Broad Creek; Bush River; Churchville; Havre de Grace (common in all localities); Lapidum.

9. *Bufo woodhousii fowleri* Hinckley: FOWLER'S TOAD. Churchville; Broad Creek; Lapidum.

10. *Acris gryllus crepitans* Baird: CRICKET FROG. Rock Run; Broad Creek; Churchville (frequent); along Susquehanna River in canal, Conowingo to Havre de Grace.

11. *Hyla crucifer crucifer* Wied: SPRING PEEPER. Havre de Grace; Churchville; Broad Creek; woods, 2 miles north of Havre de Grace (October 6, 1955, #1024).

12. *Hyla versicolor versicolor* LeConte: COMMON TREE FROG. Broad Creek.

13. *Rana catesbeiana* Shaw: BULL FROG. Bush River (in swamps); Havre de Grace; Aberdeen; Broad Creek (in swamps near camp); Hickory north of Bel Air.

14. *Rana clamitans* Latreille: GREEN FROG. Churchville (April 25, 1953, #501); Broad Creek; Bel Air; Hickory; Susquehanna River near Glen Cove (May 12, 1953, #284).

15. *Rana sylvatica* LeConte: WOOD FROG. Deer Creek at Darlington (September 20, 1953, #25); Shures Landing below Conowingo Dam (March 20, 1954, #567); Broad Creek (in nearby swampy areas); Deer Creek at Susquehanna River; Schweers Landing along Susquehanna River (October 6, 1955, #1025).

16. *Rana pipiens* Schreber: LEOPARD FROG. Churchville (April 25, 1953, #502-503); Broad Creek; Bel Air.

17. *Rana palustris* LeConte: PICKEREL FROG. Broad Creek; woods along Route 1 at Deer Creek (October 6, 1955, #1023); Lapidum (October 6, 1955, #1027).

18. *Chelydra serpentina serpentina* (Linnaeus): SNAPPING TURTLE. Havre de Grace; Webster; Edgewood; Deer Creek near Kalmia (April 30, 1955, #980); Broad Creek, in Broad Creek Lake (seen up to 30 pounds; many juveniles caught in streams leading to lake); The Rocks; Churchville (frequent in ponds and swamps).

19. *Clemmys guttata* (Schneider): SPOTTED TURTLE. Broad Creek (behind dam, in swamp next to creek, 5 collected); Bush River; Darlington; along Susquehanna River near Conowingo Dam.

20. *Clemmys mühlenbergi* (Schoepff): MUHLENBERG'S TURTLE. Broad Creek, in swampy area near pipe drain at Broad Creek Scout Camp (4 collected in three years). New to Harford County.

21. *Clemmys insculpta* (LeConte): WOOD TURTLE. Roberts Island; Broad Creek (below dam, 2 collected along creek); Havre de Grace (USNM 14582).

22. *Terrapene carolina carolina* (Linnaeus): BOX TURTLE. Havre de Grace; Webster; Aberdeen; Emmorton; Bel Air; The Rocks; Broad Creek; Rock Run.

23. *Sternotherus orodatus* Latreille: MUSK TURTLE. Along Little Gunpowder River, in Harford County, near Fork.

24. *Chrysemys picta picta* (Schneider): PAINTED TURTLE. Havre de Grace; along Susquehanna River near Darlington; Conowingo Dam; Broad Creek (around lake and in streams); Aberdeen; Churchville. New to Harford County.

25. *Graptemys geographica* (LeSueur): MAP TURTLE. Havre de Grace (USNM 17833); Susquehanna River at Darlington (Roger Conaut).

26. *Kinosternon subrubrum subrubrum* (Lacépède): MUD TURTLE. Bush River (CMP 8035).

27. *Sceloporus undulatus hyacinthinus* (Green): NORTHERN FENCE SWIFT. The Rocks (RHM); Broad Creek (collected near nature lodge). Ex-

tending the range north and east in Harford County in Maryland.

28. *Eumeces fasciatus* (Linnaeus): FIVE-LINED SKINK. Bush River (CMP 8379); Broad Creek (seen near rocks where copperheads stay; collected by nature lodge). Extending range northward about 20 miles to Pennsylvania line.

29. *Natrix septemvittata* (Say): QUEEN SNAKE. Along Susquehanna River above Havre de Grace; near Edgewood; Broad Creek (frequent along streams on overhanging branches); Schweers Landing along Susquehanna River (ZSP 385); Van Bibber (USNM 36087). Extending range northward along Susquehanna River to Pennsylvania Line.

30. *Natrix sipedon sipedon* (Linnaeus): COMMON WATER SNAKE. The Rocks, along Deer Creek; Havre de Grace; Dublin; Carsens Run; Churchville; Broad Creek (common along streams and on overhanging branches).

31. *Thamnophis sauritus sauritus* (Linnaeus): RIBBON SNAKE. Near Aberdeen; Broad Creek (some observed with part of tail missing); The Rocks (2 specimens observed and let go, July 1954); Bush River (CMP 8374); Edgewood Arsenal (MNHS); The Rocks (RHM). Extending range north and east to Susquehanna River near Pennsylvania line.

32. *Thamnophis sirtalis sirtalis* (Linnaeus): GARTER SNAKE. Shures Landing below Conowingo Dam (March 20, 1954, #565); Broad Creek; Havre de Grace; The Rocks; Churchville. Extending range north and east to Pennsylvania line.

33. *Haldea valeriae valeriae* Baird and Girard: EASTERN GROUND SNAKE. Broad Creek (under old plant stalk, embedded in ground); Prospect; north of Bradshaw, along Little Gunpowder. New to Harford County.

34. *Heterodon platyrhinos platyrhinos* Latreille: HOG-NOSED SNAKE. Broad Creek (5 collected in year, near fence posts and in dead logs); near Magnolia (DOR, May 1952); Aberdeen (Robert Duppstatt). Extending range north and east to Pennsylvania line.

35. *Diadophis punctatus edwardsi* (Merrem): RING-NECKED SNAKE. Deer Creek at Susquehanna near Darlington (September 20, 1953, #27); Broad Creek (under rotted logs and flat rocks). New to Harford County.

36. *Storeria dekayi* (Holbrook): DEKAY'S SNAKE. Churchville. New to Harford County.

37. *Ophedryx aestivus* (Linnaeus): ROUGH

GREEN SNAKE. Aberdeen (climbing over shrubs). New to Harford County.

38. *Carphophis amoenus amoenus* (Say): WORM SNAKE. Conowingo; Broad Creek. New to Harford County.

39. *Coluber constrictor constrictor* (Linnaeus): BLACK SNAKE, BLACK RACER. Broad Creek; Deer Creek at Susquehanna River (Spring 1953, in woods). New to Harford County.

40. *Elaphe obsoleta obsoleta* (Say): PILOT BLACK SNAKE. Broad Creek; Churchville; along Little Gunpowder River; Bel Air; The Rocks. New to Harford County.

41. *Lampropeltis doliata triangulum* (Lacépède): MILK SNAKE. Havre de Grace (USNM 9284); Broad Creek (collected in ruins of old building). Extending range northward to Pennsylvania line.

42. *Lampropeltis getulus getulus* (Linnaeus): EASTERN KING SNAKE. Along Little Gunpowder River, northwest of Fallston; near Aberdeen (Robert Duppstatt). Extending range well into Harford County.

43. *Ancistrodon contortrix mokeson* (Daudin): COPPERHEAD. The Rocks (on boulders sunning, 1946); Kalmia (1954); Broad Creek (on rocky ledges below dam; some killed at camp site above lake); Deer Creek (Fowler, 1925); near Darlington; on rocky ledges along Susquehanna River just above Havre de Grace. Widens the range in Harford County.

Although the following species of amphibians have not been collected in Harford County, to the best of my knowledge, they do occur just below the Conowingo Dam on the Cecil County side of the Susquehanna River. Since they all show aquatic or semi-aquatic tendencies, there is no reason why they might not be found in Harford County.

*Ambystoma maculatus* (Shaw): Low ground between the Octoraro River and Port Deposit, #38-41, March 18, 1953; just below Conowingo Dam, #48, September 20, 1953.

*Ambystoma opacum* (Gravenhorst): Under logs just below Conowingo Dam, #47, September 20, 1953; low woods between Octoraro River and Port Deposit, #37 and 37a, March 18, 1953.

*Hemidactylium scutatum* (Schlegel): Under logs just below Conowingo Dam, #46, September 20, 1953.

*Cryptobranchus alleganiensis* (Daudin): Collected in the Octoraro River many years ago; common farther north in the Susquehanna River and its tributaries in Pennsylvania.